CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 77-127

WASTE DISCHARGE REQUIREMENTS FOR:

OWENS-CORNING FIBERGLASS CORPORATION
CLASS II-2 SOLID WASTE DISPOSAL SITE
SAN JOSE, SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. Owens-Corning Fiberglass Corporation, hereinafter called the discharger, submitted a report of waste discharge dated November 28, 1972, for its Alviso disposal site and submitted additional site information dated June 16, 1975.

2. The disposal site is owned by the discharger and is located north of the San Jose/Santa Clara Water Pollution Control Plant on Los Esterros Road in San Jose, as shown in Attachment A, which is incorporated herein and made part of this Order.

3. The discharger's Alviso disposal site has been in operation since 1956. About 22 acres of the 88 acre parcel has been used for disposal of solid wastes generated by the discharger's manufacturing operations. At present, the site is mainly used for disposal of solid wastes such as glassfibers, paper, foil, cured phenolic resin, wood pallets, asphalt, sand, and cafeteria wastes, all of which is classified as either group 2 or group 3 wastes.

4. The disposal site is underlain by 10 to 15 feet of silt, silty clay, and clay commonly known as bay mud. No useable groundwater exist to a depth of 100 feet beneath the disposal site. Generally, the impermeable bay mud which underlies the site is saturated to depths of three to five feet. The lands to the north of the disposal area consist of marshlands and are within the San Francisco Bay National Wildlife Refuge. Lands to the west and south are largely under-developed.

5. The beneficial uses of marshlands within San Francisco Bay National Wildlife Refuge and San Jose/Santa Clara Water Pollution Control Plant effluent channel are:

   a. Habitat and resting for waterfowl
   b. Fish habitat
   c. Recreation
   d. Esthetic enjoyment

6. This landfill site, subsequent to modifications required to comply with this Order, will meet the criteria contained in the California Administrative Code, Title 23, Chapter 3, Subchapter 15, for classification as a Class II-2 disposal site suitable to receive Group 2 and Group 3 wastes.

7. The Board adopted a Water Quality Control Plan for the San Francisco Bay Basin in April 1975 and this Order implements the Water Quality objectives stated in that Plan.

8. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this site.

9. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

10. This project involves the continued operation of a privately owned Class II-2 facility with minor alterations to the land. Consequently, this project will not have a significant effect on the environment based upon the exemption provided in Section 15101, Title 14, California Administrative Code.

IT IS HEREBY ORDERED THAT Owens-Corning Fiberglass Corporation and any other person who operates this site, shall comply with the following:

A. Waste Disposal Specifications

1. The disposal of waste shall not cause pollution or a nuisance.

2. Group 2 wastes shall not be placed in or allowed to contact ponded water from any source whatsoever.

3. Group 1 wastes shall not be stored or deposited at this site.

4. Waste materials shall not be disposed of in any location where they can be carried from the disposal site and discharged into waters of the State.

5. Liquid wastes or high moisture content wastes shall not be discharged with group 2 waste at the site unless authorized in writing by the Executive Officer of this Board.

6. The discharger shall remove and relocate any wastes which are discharged at this site in violation of these requirements.

B. Leachate and Drainage Specifications

1. Leachate from Group 2 wastes or ponded water containing leachate shall not be discharged to waters of the State. Water used during disposal site operations shall be limited to a minimal amount reasonably necessary for purposes of dust control and fire suppression.

2. The site shall be protected from any washout or erosion of wastes or covering material, and from inundation, which could occur as a result of floods having a predicted frequency of once in 100 years.

3. Surface drainage from tributary areas, and internal site drainage from surface or subsurface sources shall not contact or percolate through Group 2 wastes deposited during the active life of the site.

4. Vertical and lateral hydraulic continuity with surface and groundwaters shall be prevented by the presence of a natural clay barrier of at least five feet in thickness and a permeability of 1×10^{-6} cm/sec or less on the bottom and sides of disposal areas. If such a natural condition does not exist, an artificial barrier shall be constructed to meet the above specification.

5. All completed disposal area(s) shall be covered with a minimum of three feet of compacted impervious material. The exterior surfaces shall be graded to a minimum slope of three (3) percent to promote lateral runoff of precipitation and minimize infiltration of precipitation into the disposal area.

6. The discharge of waste shall not cause the following conditions to exist in waters of the State at any place:

   a. Surface water

      Floating, suspended, or deposited macroscopic particulate matter or foam;

      Bottom deposits or aquatic growths;

      Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

      Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

   b. Groundwater

      The useable groundwater shall not be degraded as a result of the solid waste disposal operation.

C. Provisions

1. The discharger shall comply immediately with all sections of this Order except B.2 and B.5.

2. The discharger shall comply with the following time schedule to assure compliance with specification B.2 of this Order:

Task	Completion Date	Report of Compliance Due
Determine status of compliance		October 30, 1977

Task	Completion Date	Report of Compliance Due
If compliance not achieved submit conceptual plan and time schedule	December 1, 1977	December 15, 1977
Progress Report		March 1, 1978
Achieve full compliance	June 1, 1978	June 15, 1978

3. The use of any new area located to the north, east or west of the existing active disposal area shall not commence without the written approval of the Executive Officer. This approval shall be based on a demonstration that the area(s) meet all applicable specifications of this Order.

4. All plans and technical reports described in Provision C.2 above shall be prepared by a certified engineering geologist or a registered engineer.

5. The discharger shall maintain a copy of the Order at the site or office so as to be available at all times to site operating personnel.

6. The discharger shall file with this Board a report of any material change or proposed change in the character, location or quantity of this waste discharge. For the purpose of these requirements, this includes any proposed change in the boundaries, contours or ownership of the disposal area.

7. One hundred and eighty (180) days prior to discontinuing use of any major phase of this site for waste disposal, the discharger shall submit a technical report to the Board describing the methods and controls used to assure protection of the quality of surface and groundwaters of the area during final operations and during any subsequent use of the land. This report shall be prepared by or under the supervision of a registered engineer or a certified engineering geologist. The method used to close the site and maintain protection of the quality of the surface and groundwaters shall comply with waste discharge requirements established by the Regional Board.

8. This Board considers the property owner to have a continuing responsibility for correcting any problems which may arise in the future as a result of this waste discharge or water applied to this property during subsequent use of the land for other purposes.

9. The discharger shall file with the Board technical reports on self-monitoring work performed according to the detailed specifications contained in any Monitoring and Reporting Program which may be directed by the Executive Officer.

10. The discharger shall permit the Regional Board:

(a) Entry upon premises on which waste are located or in which any required records are kept,

(b) Access to copy any records required to be kept under terms and conditions of this Order,

(c) Inspection of monitoring equipment or records, and

(d) Sampling of any discharge.

I Fred H. Dierker, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on **September 20, 1977.**

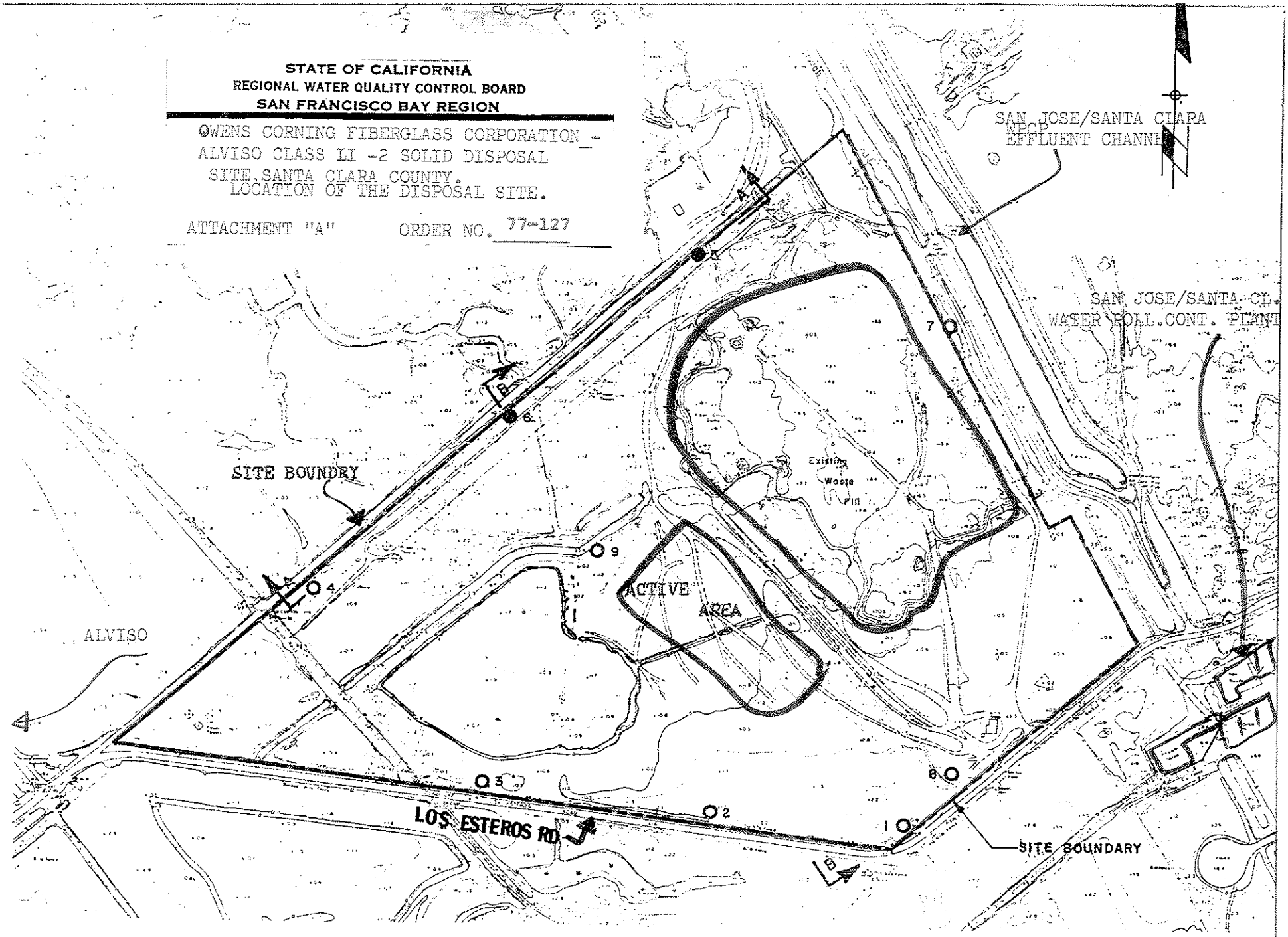
FRED H. DIERKER
Executive Officer

Attachments:
A - Map
Self-Monitoring Program

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

OWENS CORNING FIBERGLASS CORPORATION -
ALVISO CLASS II -2 SOLID DISPOSAL
SITE, SANTA CLARA COUNTY.
LOCATION OF THE DISPOSAL SITE.

ATTACHMENT "A" ORDER NO. 77-127



PLAN

Scale 0 200 400 600 800 1000 1200 1400 1600 1800 2000 Feet

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM
FOR

Owens-Corning Fiberglass Corporation

Alviso, Class II-2, Solid Waste Disposal Site

San Jose, Santa Clara

ORDER NO. 77-127

CONSISTS OF

PART A

AND

PART B

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

OWENS-CORNING FIBERGLASS CORPORATION, ALVISO
CLASS II-2 SOLID WASTE DISPOSAL SITE, SAN
JOSE, SANTA CLARA COUNTY

PART A

A. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13268, 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No. 73-16.

The principal purposes of a monitoring program by a waste discharger, also referred to as self-monitoring program, are: (1) to document compliance with waste discharge requirements and prohibitions established by this Regional Board, (2) to facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge, (3) to develop or assist in the development of effluent or other limitations, discharge prohibitions, national standards of performance, pretreatment and toxicity standards, and other standards, and (4) to prepare water and wastewater quality inventories.

B. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analyses shall be performed according to the latest edition of Standard Methods for the Examination of Water and Wastewater prepared and published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation, or other methods approved and specified by the Executive Officer of this Regional Board including the methods specified in attached APPENDIX E.

Water and waste analyses shall be performed by a laboratory approved for these analyses by the State Department of Health or a laboratory approved by the Executive Officer. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his laboratory and shall sign all reports of such work submitted to the Regional Board.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

C. DEFINITION OF TERMS

1. Grab sample means a sample collected at any time.

2. Standard Observations

a. Receiving Water - Marshlands and Periphery of Disposal Facilities

(1) Discoloration and turbidity: description of color, source, and size of affected area.

(2) Odor: presence or absence, characterization, source, and distance of travel.

(3) Evidence of beneficial water use: presence of water-associated wildlife, fishermen, and other recreational activities in the vicinity of the sampling stations.

(4) Hydrographic condition:

(a) Water and sampling depths.

(5) Weather condition:

(a) Wind - direction and estimated velocity.
(b) Precipitation - total precipitation during the previous five days and on the day of observation.

b. Land Retention or Disposal Area

This applies both to liquid and solid wastes confined or unconfined.

(1) Determine height of the freeboard at lowest point of dikes confining liquid wastes.

(2) Evidence of leaching liquid from area of confinement and estimated size of affected area. (Show affected area on a sketch.)

(3) Odor: presence or absence, characterization, source, and distance of travel.

(4) Estimated number of waterfowl and other water-associated birds in the disposal area and vicinity.

D. SCHEDULE OF SAMPLING, ANALYSES, AND OBSERVATIONS

The discharger is required to perform observations, sampling, and analyses according to the schedule in Part B with the following conditions:

E. RECORDS TO BE MAINTAINED

1. Written records shall be maintained at the landfill site or office and shall be retained for a minimum of 3 years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board. Such records shall show the following for each sample:

a. Identity of sampling and observation stations by number.

b. Date and time of sampling and/or observations.

c. Date and time that analyses are started and completed, and name of personnel performing the analyses.

d. Complete procedure used, including method of preserving sample and identity and volumes of reagents used. A reference to specific section of Standard Methods is satisfactory.

e. Calculations of results.

f. Results of analyses and/or observations.

F. REPORTS TO BE FILED WITH THE REGIONAL BOARD

1. Written reports shall be filed for each calendar month (unless specified otherwise in Part B) by the fifteenth day of the following month. In addition, an annual report shall be filed as indicated in F-1-f. The reports shall be comprised of the following:

a. Letter of Transmittal:

A letter transmitting self-monitoring reports should accompany each report. Such a letter shall include a discussion of requirement violations found during the past month and actions taken or planned for correcting violations, such as plant operation modifications and/or plant facilities expansion. If the discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true and correct.

Monitoring reports shall be signed as follows:

(1) In the case of corporations, by a principal executive officer at the level of vice-president or his duly authorized representative if such representative is responsible for the overall operation of the facility from which the discharge originates,

(2) In the case of a partnership, by a general partner, or

(3) In the case of a sole proprietorship, by the proprietor,

(4) In the case of a municipal, State, or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.

b. Compliance Evaluation Summary

Each report shall be accompanied by a compliance evaluation summary sheet prepared by the discharger. The report format will be specified by the Regional Board.

c. Map or Aerial Photograph

A map or aerial photograph shall accompany the report showing sampling and observation station locations.

d. Results of Analyses and Observations

Tabulations of the results from each required analysis specified in Part B by date, time, type of sample, and station, signed by the laboratory director. The report format will be specified by the Regional Board.

e. List of Approved Analyses

(1) Listing of analyses for which the discharger is approved by the State Department of Health.

(2) List of analyses performed for the discharger by another approved laboratory (and copies of reports signed by the laboratory director of that laboratory shall also be submitted as part of the report).

f. Annual Reporting

By October 1 of each year, the discharger shall submit an annual report to the Regional Board covering the previous calendar year. The report shall contain:

1. Tabular and graphical summaries of the monitoring data obtained during the previous year.

2. Comprehensive discussion of the compliance record and the corrective actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements.

3. A map showing the area in which filling has been completed during prior calendar year.

4. **Summary of the groundwater analyses indicating any change in the quality of the groundwater.**

PART B

I. DESCRIPTION OF SAMPLING STATIONS & SCHEDULE OF SAMPLING, ANALYSES & OBSERVATIONS

A. WASTE MONITORING

1. Monthly, record the total volume and weight of a refuse (in cubic yards and tons) deposited on the site during the month, and the daily average. Report Quarterly

2. Monthly, record the volume of fill completed, in cubic yards showing the location(s) and dimensions on a sketch or a map. Report Quarterly

(The monthly records shall be maintained at the landfill offi[illegible]. Weight of the refuse shall be estimated and reported Quarterly.)

B. ON-SITE OBSERVATIONS

Station	Description
S-1 thru S-'n'	Observation stations located on any past or presently active portion of the waste site at grid squares delineated by a 500 foot grid network.
P-1 thru P-'n'	These stations shall be located at equidistant intervals not exceeding 500 feet around the perimeter of the active and once active portion of the disposal site excluding the area described by the 'S' stations.

Station	Frequency of Observation	Observations
All S Stations in active and inactive disposal areas	Weekly throughout the year	1. Evidence of ponded water at any point on the disposal site. 2. Evidence of refuse not confined within a cell or parcel. 3. Evidence of "day-lighted" refuse. 4. Evidence of waste in contact with pools surface water.
All P stations	Weekly throughout the year	1. Evidence of refuse not confined within a cell or parcel. 2. Evidence of odors presence or absence, the characteristics, intensity, source and distance of travel.

Station	Frequency of Observation	Observations
		3. Evidence of leachate or water entering or leaving the disposal site, and estimated size of affected area.

All "P" and "S" stations must be monitored according to the above described frequency and report quarterly.

C. SEEPAGE AND/OR LEACHATE MONITORING

Station	Description
L-1 thru L-'n'	At a point in each discharge point from the disposal area and at the point where liquid leaves the discharger's property. Include a map indicating locations of discharge(s).

Station	Type of Sample and Frequency	Analyses	Units
All L Stations	Grab sample daily during each discharge or occurrance	COD	mg/l
		Dissolved sulfide	mg/l
		Odors	description
		Color	description
		pH	electrometric units
		Total Dissolved sulfide	mg/l

A report shall be made by telephone of any seepage or leachate leaving the property immediately after occurrance. A written report shall be filed with this Board within 5 days and shall contain the following information: 1)Map showing location(s) of discharge 2)flow rate 3) nature of effect (i.e. discoloration of receiving water, size of affected area), and 4)corrective measures undertaken.

D. PEIZOMETRIC MONITORING

Station	Description
G-1	A groundwater monitoring well located at the existing well adjacent to the building near the entrance.
G-2	A groundwater monitoring well located at the existing well No. 4 described in the EMCOM Geotechnical Report dated May 9, 1975.
G-3	A groundwater monitoring well located at the existing well No. 5 described in the EMCOM Geotechnical Report dated May 9, 1975.

Station	Type of Sample and Frequency	Analyses	Units
All "G" Stations	Grab sample quarterly throughout the year	Color	visual
		water level	feet
		chloride	mg/l
		COD	mg/l
		pH	electrometric
		Total dissolved Solids (TDS)	mg/l
		Nitrate Nitrogen as N	mg/l
		Electrical Conductivity	micromhos/cm
		Total Kjeldahl nitrogen (as N)	mg/l
		Phenol	mg/l

All "G" stations shall be reviewed after one year of analyses.

Prior to taking grab samples of the "G" wells, the wells water must be pumped minimum of two minutes.

I, Fred H. Dierker, Executive Officer, do hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in the Regional Board Order No. **77-127.**

2. Has been ordered in writing by the Executive Officer on **September 20, 1977,** and becomes effective immediately.

3. May be reviewed at any time subsequent to the effective date upon written notice from either the Executive Officer or the discharger, and will be revised upon written agreement of the Executive Officer and the discharger.

FRED H. DIERKER
Executive Officer

Attachment:
Appendix E

Sample collection, storage, and analyses shall be performed according to the latest edition of Standard Methods for the Examination of Water and Wastewater prepared and published jointly by the American Public Health Association, American Water Works Association, and Water Pollution Control Federation, or other methods approved and specified by the Executive Officer of this Regional Board.

Water and waste analyses shall be performed by a laboratory approved for these analyses by the State Department of Health or a laboratory approved by the Executive Officer. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his laboratory and shall sign all reports of such work submitted to the Regional Board.

Federal regulations were published (Table I, 40 CFR136, October 16, 1973) governing the methods that are to be used in analyzing wastes for pollutants. Dischargers are required to use Standard Methods for all parameters for which EPA and State Department of Health approves Standard Methods. Table II lists those constituents for which a test in Standard Methods was not deemed acceptable and lists the method and reference that is considered acceptable.

If a discharger wishes to use an alternate method to Standard Methods which is approved by EPA, this request may be approved by the Executive Officer.

Under certain circumstances other methods will be approved by EPA on a case-by-case basis and upon request by the discharger.

Such a request may be made by letter until printed application forms are made available. The letter or application should contain the following information:

1. The name and address of the responsible person or firm making the discharge (if not the applicant), the permit number, the issuing agency, and the discharge serial number;

2. Identify the pollutant or parameter for which approval of an alternate testing procedure is being requested;

3. Justification for using testing procedures other than those specified;

4. A detailed description of the proposed alternate test procedure, together with references to published studies of the applicability of the alternate test procedure to the effluents in question.

The regional board executive officer should forward the application letter to the State Board. The application will then be transmitted to the Department of Health with a request for comments and recommendations.

termined by one of the standard analytical methods cited and described in Table I, or under certain circumstances by other methods that may be more advantageous to use when such other methods have been previously approved by the Regional Administrator of the Region in which the discharge will occur, and providing that the Director of the State in which such discharge will occur does not object to the use of such alternate test procedures.

Under certain circumstances the Regional Administrator or the Director in the Region or State where the discharge will occur may determine for a particular discharge that additional parameters or pollutants must be reported. Under such circumstances, additional test procedures for analysis of pollutants may be specified by the Regional Administrator or Director upon the recommendation of the Director of the Methods Development and Quality Assurance Research Laboratory.

TABLE I—LIST OF APPROVED TEST PROCEDURES

Parameter and units	Method	References: Standard methods	ASTM	EPA methods
General analytical methods:				
1. Alkalinity as $CaCO_3$ mg $CaCO_3$/liter.	Titration: electrometric, manual or automated method—methyl orange.	p. 370	p. 143	p. 6. p. 8.
2. B.O.D. five day mg/liter.	Modified winkler or probe method	p. 489		
3. Chemical oxygen demand (C.O.D.) mg/liter.	Dichromate reflux	p. 495	p. 219	p. 17.
4. Total solids mg/liter.	Gravimetric 103–105° C.	p. 535		p. 280.
5. Total dissolved (filterable) solids mg/liter.	Glass fiber filtration 180° C.			p. 275.
6. Total suspended (nonfilterable) solids mg/liter.	Glass fiber filtration 103–105° C.	p. 537		p. 278.
7. Total volatile solids mg/liter.	Gravimetric 550° C.	p. 536		p. 282.
8. Ammonia (as N) mg/liter.	Distillation—nesslerization or titration automated phenolate.			p. 131. p. 141.
9. Kjeldahl nitrogen (as N) mg/liter.	Digestion & distillation—nesslerization or titration automated digestion phenolate.	p. 463		p. 149. p. 157.
10. Nitrate (as N) mg/liter.	Cadmium reduction; brucine sulfate; automated cadmium or hydrazine reduction.	p. 458 p. 461	p. 124	p. 170. p. 175. p. 185.
11. Total phosphorus (as P) mg/liter.	Persulfate digestion and single reagent (ascorbic acid), or manual digestion, and automated single reagent or stannous chloride.	p. 526 p. 532	p. 42	p. 235. p. 236. p. 259.
12. Acidity mg $CaCO_3$/liter	Electrometric end point or phenolphthalein end point.		p. 148	
13. Total organic carbon (TOC) mg/liter.	Combustion—infrared method [1]	p. 257	p. 762	p. 221.
14. Hardness—total mg $CaCO_3$/liter.	EDTA titration; automated colorimetric atomic absorption.	p. 179	p. 179	p. 76. p. 78.
15. Nitrate (as N) mg/liter.	Manual or automated colorimetric diazotization.			p. 185. p. 195.
Analytical methods for trace metals:				
16. Aluminum—total [2] mg/liter.	Atomic absorption	p. 210		p. 98.
17. Antimony—total [2] mg/liter.	Atomic absorption [4]			
18. Arsenic—total mg/liter.	Digestion plus silver diethyldithiocarbamate, atomic absorption. [3]	p. 65 p. 62		p. 13.
19. Barium—total [2] mg/liter.	Atomic absorption [4]	p. 210		
20. Beryllium—total [2] mg/liter.	Aluminon; atomic absorption	p. 67 p. 210		
21. Boron—total mg/liter.	Curcumin	p. 69		
22. Cadmium—total [2] mg/liter.	Atomic absorption; colorimetric	p. 210 p. 422	p. 692	p. 101.
23. Calcium—total [2] mg/liter.	EDTA titration; atomic absorption	p. 84	p. 692	p. 102.
24. Chromium VI mg/liter.	Extraction and atomic absorption; colorimetric.	p. 429		p. 94.
25. Chromium—total [2] mg/liter.	Atomic absorption; colorimetric	p. 210 p. 426	p. 692	p. 104.
26. Cobalt—total [2] mg/liter.	Atomic absorption [4]		p. 692	
27. Copper—total [2] mg/liter.	Atomic absorption; colorimetric	p. 210 p. 433	p. 692 p. 419	p. 106.
28. Iron—total [2] mg/liter.	do	p. 210 p. 433	p. 692 p. 153	p. 108.
29. Lead—total [2] mg/liter.	do	p. 210 p. 436	p. 692	p. 110.
30. Magnesium—total [2] mg/liter.	Atomic absorption; gravimetric	p. 210 p. 116 p. 201	p. 692	p. 112.
31. Manganese—total [2] mg/liter.	Atomic absorption	p. 210	p. 692	p. 114.
32. Mercury—total mg/liter.	Flameless atomic absorption [3]			
33. Molybdenum—total [2] mg/liter.	Atomic absorption [4]			
34. Nickel—total [2] mg/liter.	Atomic absorption; colorimetric [4]	p. 443	p. 692	
35. Potassium—total [2] mg/liter.	Atomic absorption; colorimetric; flame photometric.	p. 283 p. 285	p. 326	p. 116.
36. Selenium—total mg/liter.	Atomic absorption [3]			
37. Silver—total [2]	Atomic absorption [4]	p. 210		
38. Sodium—total [2] mg/liter.	Flame photometric; atomic absorption	p. 317	p. 326	p. 118.
39. Thallium—total [2] mg/liter.	Atomic absorption [4]			
40. Tin—total [2] mg/liter.	do			
41. Titanium—total mg/liter.	do			
42. Vanadium—total [2] mg/liter.	Atomic Absorption; Colorimetric	p. 157		
43. Zinc—total [2] mg/liter.	Atomic Absorption; Colorimetric	p. 210 p. 444	p. 692	p. 120.
Analytical methods for nutrients, anions, and organics:				
44. Organic nitrogen (as N) mg/liter.	Kjeldahl nitrogen minus ammonia nitrogen.	p. 468		p. 149.
45. Ortho-phosphate (as P) mg/liter.	Direct single reagent; automated single reagent or stannous chloride.	p. 532	p. 42	p. 235. p. 236. p. 259.
46. Sulfate (as SO_4) mg/liter.	Gravimetric; turbidimetric; automated colorimetric—barium chloranilate.	p. 331 p. 331	p. 51 p. 52	p. 248. p. 248.
47. Sulfide (as S) mg/liter.	Titrimetric—iodine	p. 551		p. 246.
48. Sulfite (as SO_3) mg/liter.	Titrimetric; iodide-iodate	p. 337	p. 261	
49. Bromide mg/liter.	do			p. 216.
50. Chloride mg/liter.	Silver nitrate; mercuric nitrate; automated colorimetric-ferricyanide.	p. 96 p. 97	p. 23 p. 21	p. 29. p. 31.
51. Cyanide—total mg/liter.	Distillation—silver nitrate titration or pyridine pyrazolone colorimetric.	p. 367	p. 539	p. 41.
52. Fluoride mg/liter.	Distillation—SPADNS	p. 171 p. 174	p. 141	p. 61.
53. Chlorine—total residual mg/liter.	Colorimetric; amperometric titration	p. 882	p. 223	
54. Oil and grease mg/liter.	Liquid-Liquid extraction with trichlorotrifluoroethane.	p. 251		
55. Phenols mg/liter.	Colorimetric, 4 AAP	p. 502	p. 415	p. 232.
56. Surfactants mg/liter.	Methylene blue colorimetric	p. 339	p. 619	p. 131.
57. Algicides mg/liter.	Gas chromatography [4]			
58. Benzidine mg/liter.	Diazotization—colorimetric [3]			
59. Chlorinated organic compounds (except pesticides) mg/liter.	Gas chromatography [4]			
60. Pesticides mg/liter.	Gas chromatography [5]			
Analytical methods for physical and biological parameters:				
61. Color platinum-cobalt units or dominant wave-length, hue, luminance, purity.	Colorimetric; spectrophotometric	p. 160 p. 392		p. 38.
62. Specific conductance micromhos at 25° C.	Wheatstone bridge	p. 323	p. 166	p. 284.
63. Turbidity jackson units.	Turbidimeter	p. 350	p. 497	p. 308.

See Note at end of Table I

TABLE II

METHODS TO USE IN PREFERENCE TO
"STANDARD METHODS"

Constituent	Units	Method	Reference
Total dissolved solids (filterable)	mg/l	Glass fiber filtration-180°C	EPA Methods[1/] - p. 275
Ammonia	mg N/l	Distillation-nesslerization or titration automated phenolate	EPA Methods - p. 134
Acidity	mg $CaCO_3$/l	Electrometric endpoint or phenolphtalein end point	ASTM[2/] - p. 148
Nitrite	mg N/l	Manual or automated colorimetric diazotization	EPA Methods - p. 185 p. 195
Antimony - total[6/]	mg/l	Atomic absorption	3/
Cobalt - total	mg/l	" "	ASTM - p. 692
Molybdenum - total	mg/l	" "	3/
Selenium - total	mg/l	" "	3/
Thallium - total	mg/l	" "	3/
Tin	mg/l	" "	3/
Titanium	mg/l	" "	3/

certain that the sample does not boil. Cool the beaker and add another 3 ml portion of distilled concentrated HNO_3. Cover the beaker with a watch glass and return to the hotplate. Increase the temperature of the hotplate so that a gentle reflux action occurs. Continue heating, adding additional acid as necessary until the digestion is complete generally indicated by a light colored residue. Add (1:1 with distilled water) distilled concentrated HCl in an amount sufficient to dissolve the residue upon warming. Wash down the beaker walls and the watch glass with distilled water and filter the sample to remove silicates and other insoluble material that could clog the atomizer. Adjust the volume to some predetermined value based on the expected metal concentrations. The sample is now ready for analysis. Concentrations so determined shall be reported as "total".